

Development of Attention in Graders

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Abstract: Objective of this study is a theoretical substantiation and experimental approbation of forms and methods of attention development in graders. The experiment involved 100 pupils from Kazan Secondary General Education School. We have collected information using two variants of tests for determining the scope and level of attention as well as mathematical statistics methods, t-Student test to verify hypotheses about the significance of difference in the averages. The ascertaining experiment results have shown that most test subjects have a low level of attention. After the formative experiment using psychological and educational attention development program "Most Attentive" the graders have shown a significant increase in their attention level. The performed pedagogical experiment has proved the correctness of the hypothesis and theoretical provisions for the implementation of the defined pedagogical conditions for developing the attention in graders.

Key words: Attention, voluntary attention, graders, attention development in graders, pupils

INTRODUCTION

Attention is an essential characteristic and factor of development of a pupil as the subject of learning activities. It is known that any training activities constantly require a child to pay attention enabling him to accept, remember and comprehend the material to act in accordance with the instructions of his teacher and certain components of activity may not arouse immediate interest, however, require self-organization and connation.

Attention is highly important psychological process which is a prerequisite for the successful implementation of any both external and internal activities of children and its qualitative performance as a result of such process (Leontieva, 1983). The development of attention is one of the essential prerequisites for successful education. School makes its demands on voluntariness of child attention in terms of the ability to act without distractions. A child must follow the instructions and monitor the result obtained. Children, who have just started school do not have a formed attention, therefore, it is up to their teacher to develop and improve their attention. Development and improvement of attention is indeed as important as formation of skills in reading, writing and mathematics. An attentive child assimilates educational material easier, clearly and accurately performs motions while writing the letters and numbers that indicates the effectiveness of learning activities.

Currently, the development of attention is understudied in psychology because this issue is so extended that makes it quite hard to systematize and analyze all facts related to the characteristics of attention development in middle childhood.

The issues of functional significance of attention and relation between attention and other mental processes can be considered the most studied. The most relevant papers are those by Vygotskoy (1976), Galperin (1999), Leontiev (1983), Mechinskaya (1998), Ribo (1976) and Rubinstein (2007).

Many researchers Krutetsky (2006) and Kolomensky and Panko (2009) noted that the attention of graders is characterized as highly unstable and easily distractible. Papers by Nemov (1996) and Smimova (1997) deal with the investigation of age-specific characteristics of individual attention features in graders.

Analysis of the psychological and pedagogical literature has shown that educational institutions today pay inadequate attention to the development of attention in children. There is a need to develop attention in children in various aspects of their activities, search for effective methods and forms of pedagogical influence which could make the process of attention development in middle childhood both exciting and interesting for children and effective for teachers.

It is well known today how far the elementary school curricula is complex and extensive and how difficult it can be sometimes to a child, who can not keep his attention

on details or concentrate on work, who is distracted, restless and inattentive. Otherwise, children, who can keep their attention on details for a long time, feel diligent and attentive. These children fit easier in the learning process. According to the school psychologists, among 55% of first-graders have difficulties in assuming their new social role of pupils. One of such problems is the inability to comment, distribute, redirect or focus their attention to learning activities. Therefore, it is necessary to develop attention in children, to direct their attention to uninteresting content and hold their focus thereon. For this purpose, a specially organized work must be performed using various forms and methods of pedagogical influence to develop attention.

Analysis of theoretical studies and practical teaching and research activities regarding this problem has shown that it is an understudied area of scientific knowledge and practical activities. This enabled us to formulate the hypothesis for studying this problem the development of attention in graders will be effective if:

- Draw on key characteristics of attention, its types and properties
- Take into account the age peculiarities of attention development in graders
- Develop and implement the program “Most Attentive” for developing attention in graders based on methods and forms defined

Studying the age peculiarities of attention in graders, we have found that primary school age (6-7 to 10-11 years) is determined by starting school. Today, children usually start school at age 6-7. Voluntariness, internal action plan and reflection are the main innovations in graders. The mentality of a grader thereby reaches the level of development required for studying further in secondary school, transiting easier to adolescence featuring special potential and demands.

Voluntary attention development starts in children with the implementation of goals set by their teacher and goes to the tasks set by the pupil himself. One of the main tools for the development of voluntary attention is an awareness of responsibility of graders for their acquisition of knowledge.

Development of attention is also associated with the expansion of attention and the ability to distribute it between different types of activities. The criterion for sustained attention is the diversity of the material reported, its presentation and disclosure sequence. Attention develops gradually and becomes at some point the feature of the person, its permanent characteristic which is called attention (Vygotsky, 1976).

In the course of this study, we have identified and considered forms and methods such as the game (trip-games, order-games, suggestion-games, puzzle-games and conversation-games), quiz, exercise and training. All of these forms and methods became the basis for our psychological and educational program “Most Attentive” for the development of attention in graders. Our study is concerned with approbation of this program. Objective of this study is a theoretical substantiation and experimental approbation of forms and methods of attention development in graders.

MATERIALS AND METHODS

To determine the scope of attention, we have applied an attentional capacity research technique. For this purpose, we used the stimulus material eight dotted squares are folded, so that the top one was a square with two dots and the bottom one was a square with five dots (all others go downward in sequence with the number of dots sequentially increasing). There are eight empty squares to be fill. The child sees each of the eight cards, one by one for 1-2 sec and is asked after each card to reproduce the same dots in the empty card in 15 sec. The scope of attention is assessed on a ten-point scale:

- 10 points scope of attention = to 6 units or more, i.e., the child reproduced 6 or more dots within the time given
- 8-9 points scope of attention = to 4-5 units
- 4-7 points scope of attention = to 2-3 units
- 0-3 points scope of attention < 2 units

Interpretation of results:

- 10 points high level of attention
- 5-9 points average level of attention
- 0-4 points low level of attention

Method of number arrangement is intended for assessment of voluntary attention. The survey is conducted using a special form with squares. The 25 cells of the upper square contain randomized numbers and the lower square contains empty cells. The assessment is made based on the number of correctly recorded numbers. The average is 22 numbers.

Method of attention level diagnostic is intended for investigation of attention level. The researcher records time of working with the text, characteristics of the child's behavior (whether he works with confidence, how many times checks the text, reads silently or aloud, etc.). There

is a need in attention rather than knowledge of the rules to find and fix the mistakes (the text contains 10 mistakes). Data processing count the number of mistakes missed:

- 0-2 high level of attention
- 3-4 average level of attention
- 5 and more low level of attention

The study involved 100 graders of Kazan Secondary General Education School.

RESULTS AND DISCUSSION

The ascertaining stage of the experiment gave us the following results. The results show that only 12% of pupils in the test group have a high level of attention, 28% have an average level of attention which sets one thinking that 60% of pupils have a low level of attention.

Based on the results of number arrangement method we have determined that only 24% of pupils in the test group have a high level of attention voluntariness, 36% have a low level and 40% an average level. Thus, we may conclude that the average level of voluntary attention predominates in this group.

Diagnostic of attention level showed that the average level (44%) and low level (40%) of attention are predominant in this group. While working with the text 40% of pupils have lack of confidence, 48% of them frequently re-read the text, 16% read the text aloud, 36% read it silently and most children did not perceive semantic mistakes. Thus, we can say that the level of attention in the children studied is very poor.

Formative stage was intended to reveal the effectiveness of the program "Most Attentive" for developing attention in graders based on methods and forms we had defined such as game, didactic game, quiz, exercise and training. In the formative experiment, we put a special emphasis on the development of lessons including these methods and forms for developing attention in graders. The experiment was naturally implemented and did not interfere with the educational process. The research was carried out once or twice a week for 45 min after working hours.

The program we have developed includes 20 lessons that are logically related with each other and one implies the following. It should be noted that working with children has been very effective, the pupils came easy in contact, liked lessons we had conducted.

Analysis of the results obtained by the attentional capacity research technique shows that the level of

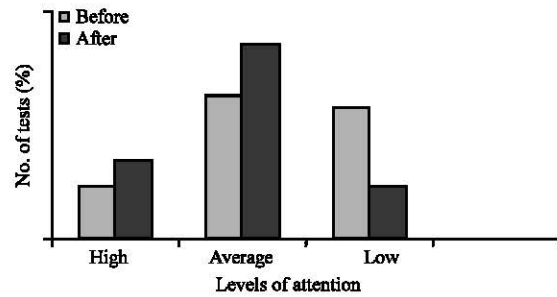


Fig. 1: Dynamics of attention development

attention have increased from 12-24%; the average level have increased from 24-48% and the low level decreased from 60-28%, respectively.

The results of number arrangement method show significant changes in the levels of voluntary attention after the experiment. The experiment led to the predominance of the high and average levels of attention which are 40 and 44%, respectively. During the study the children were less distracted, more focused and made fewer mistakes. Analysis of forms shows that the attention of the children was concentrated and voluntary, the forms had fewer deletions, overwrites, corrections, etc. All this brings us to the conclusion that the voluntariness of attention has significantly increased in the test group.

Thus, the high level of voluntary attention have increased from 24-40% (by 16%), the average level have increased from 40-44% (by 4%) and the low level decreased from 36-16% (by 20%), respectively. Significant changes in the level of voluntary attention prior to and after the experiment indicate that the work we done has contributed to raising the level of voluntary attention.

According to the method of attention level diagnostic, the average level remains predominant (60%), although its quality has considerably improved from 44-60%. The high level has also increased from 16-24%. The low level was 16%. While working with the text pupils felt more confident than at the ascertaining stage, 16% of pupils frequently re-read the text, 16% read the text aloud, 60% read it silently, children started to perceive semantic mistakes after the formative experiment (Fig. 1).

Thus, we can see that the experiment has led to significant changes in the levels of attention development. The high level of attention have increased from 16-24% (by 8%), the average level have increased from 44-60% (by 16%) and the low level decreased from 40-16% (by 24%), respectively. These results indicate a sufficient effectiveness of the implemented program.

To test our hypothesis we have applied methods of mathematical processing of psychological and educational research data. In this case, we use student t-test. The results of the t-test formative experiment are as follows:

- The differences between the average values of attention scope prior to and after the experiment are valid as $t_{emp} > t_{cr}$ ($t_{emp} = -5.89$) with $p = 0.001$
- The differences between the average values of attention voluntariness prior to and after the experiment are valid as $t_{emp} > t_{cr}$ ($t_{emp} = -3.67$) with $p = 0.005$
- The differences between the average values of attention levels prior to and after the experiment are valid as $t_{emp} > t_{cr}$ ($t_{emp} = -3.36$) with $p = 0.001$

In order to both prove that the formative experiment resulted in significant changes (“shifts”) in the indicators measured and determine the general direction of the changes occurred, we used sign G-test.

We found that the shift is not accidental changes in the group performance resulted from the formative experiment performed.

Thus, based on the results obtained, we may say that the use of the program “Most Attentive” contributes significantly to the development of attention in graders. Scope, voluntariness and level of development of attention have significantly increased.

Therefore, we can conclude that the approbated development program for developing the attention in graders including methods and forms (games, educational games, exercises, quizzes, training), we have defined, proved effective which is reflected in the results of our study.

The findings obtained were confirmed by the methods of mathematical data processing Student t-test and sign G-test.

The results obtained during our study confirm the validity of the hypothesis that drawing on key characteristics of attention, its types and properties, considering age peculiarities of attention development in the middle childhood and developing and implementing the program “Most Attentive” of attention development in graders improve the efficiency of the attention development in graders.

CONCLUSION

Our psychological and educational program “Most Attentive” for the development of attention in graders

proved effective as the results had shown a positive dynamics. Because of our research, we can say that the choice of effective methods and forms is the most important factor for the formation of personal qualities, moral norms and goals, cognitive sphere, including cognitive processes such as attention, thinking and memory. Creation of such programs will promote changes of all specified qualities and in addition will increase the efficiency of educational and pedagogical work.

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